

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MIKIO TOKUYAMA, HAYATO SHIMIZU, SATOMITSU IMAI, SHOZO
SAEGUSA, MASAHIKO SEGA, TOSHIHISA OKAZAKI and YUZO YAMAGUCHI

Appeal No. 2002-1240
Application 09/247,550

HEARD: March 18, 2003

Before KRASS, FLEMING, and BARRY, **Administrative Patent Judges**.
FLEMING, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 15, all the claims pending in the instant application.

The invention relates to a rotary recording apparatus for reading and writing data from and to a rotating disc. Magnetic disc technology has increased the capacity of memory by increasing the processing speed, and accordingly, the rotational

speed of the disc has been gradually increased. Appellants have recognized that an increase in rotational speed has caused increased disc oscillation due to a fluid force caused by rotation so as to raise a new problem that the degree of positioning accuracy is lowered. See page 1 of the Appellants' specification.

Figure 1b is a top view illustrating the disc unit. See page 4 of Appellants' specification. Figure 1b shows a gap between the outer peripheries of the disc 1 and the inner wall of shroud 20 which is maintained at a predetermined distance. This predetermined distance is referred to as the disc-shroud gap. See page 5 of Appellants' specification. Figures 4a to 4d show contour lines of air pressure differentials between the outer and rear surfaces of a rotating disc, which were obtained from results of flow analysis in such a condition that the disc-shroud gap is narrowed. Figures 4a to 4d show those with a disc-shroud gap of 2 mm, 1 mm, 0.5 mm and 0.2 mm respectively. The figures show that in the case of a disc-shroud gap of 2 mm or 1 mm, there is pressure differential which causes the disc to flutter. Meanwhile, in the case of a small disc-shroud gap of 0.5 mm or 0.2 mm, there is no pressure differential and thereby no flutter is caused. Thus, it has also been understood from the results of

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this analysis that a disc-shroud gap of less than 0.5 mm can effectively restrain occurrence of flutter. See page 9 of Appellants' specification.

Independent claim 1 present in the application is reproduced as follows:

1. A magnetic disc unit comprising a rotating disc type magnetic disc, a head for recording and reproducing data to and from said magnetic disc, and a head support mechanism for supporting said head, a carriage arm linked to said head support mechanism, and a shroud surrounding an end surface of an outer periphery of said magnetic disc, except a part wherein said carriage arm is inserted, wherein a gap between the end face of the outer periphery of said magnetic disc and the shroud is set in a range which is greater than 0.1 mm but not greater than 0.6 mm.

References

The reference relied on by the Examiner is as follows:

Iida et al. (Iida)	4,660,110	Apr. 21, 1987
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Rejections at Issue

Claims 1, 2, 6, 7, 11 and 12 stand rejected under 35 U.S.C. § 102 as being anticipated by Iida. Claims 2 through 5, 7 through 10 and 12 through 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Iida.

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Rather than repeat the arguments of the Appellants or the Examiner, we make references to the briefs¹ and answer for the respective details thereof.

OPINION

With full consideration been given to the subject matter on appeal, the Examiner's rejections and the arguments of the Appellants and the Examiner, for the reasons stated **infra**, we reverse the Examiner's rejection of claims 1, 2, 6, 7, 11 and 12 under 35 U.S.C. § 102, and we reverse the Examiner's rejection of claims 2 through 5, 7 through 10 and 12 through 15 under 35 U.S.C. § 103.

We will first address the rejection of claims 1, 2, 6, 7, 11 and 12 under 35 U.S.C. § 102. It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. **See In re King**, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and **Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.**, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

¹ Appellants filed an appeal brief on June 25, 2001. Appellants filed a reply brief on November 6, 2001. The Examiner mailed an office communication on November 27, 2001 stating that the reply brief has been entered.

Appellants argue that Iida does not disclose or teach the range of values for the gap as set forth in the independent and dependent claims of this application. See page 6 of the brief. Appellants further point out that Iida discloses a gap size in which flutter reduction is optimized at about 3 mm and some possible value less than 3 mm. Appellants argue that there is no disclosure or teaching in Iida of a gap size in the range greater than 0.1 mm to not greater than 0.6 mm. See page 7 of the brief.

We note that independent claim 1 recites:

wherein a gap between the end face of the outer periphery of said magnetic disc and the shroud is set in a range which is greater than 0.1 mm but not greater than 0.6 mm.

Furthermore, we note that claims 2, 6, 7, 11 and 12 are dependent on claim 1 and thereby include the above limitation as well.

The Examiner argues that Iida does teach the disc-shroud gap of a range which is greater than 0.1 mm but not greater than 0.6 mm in column 4, lines 46 through 64. See page 3 of the Examiner's answer. The Examiner argues that Iida teaches that the disc-shroud gap is below 3 mm and thereby is teaching an overlapping range. See page 7 of the Examiner's answer.

Appellants respond by stating that the only disclosure of Iida with respect to the disc-shroud gap range is found in figure 6 of Iida. See page 2 of the reply brief. Appellants point out that Iida stops the curve shown in figure 6 at a value of a gap of about 1.5 mm. See page 3 of the reply brief. Appellants argue that taking the teachings of Iida as a whole, Iida only teaches that the disc-shroud gap should be 3 mm or somewhat below 3 mm, possible up to about 1.5 mm. See page 4 of the reply brief. Thus, Appellants argue that Iida does not teach an overlapping range.

"It is also an elementary principle of patent law that when, as by a recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if one of them is in the prior art." **Titanium Metals Corp. of Am. v. Banner**, 778 F.2d 775, 782, 227 USPQ 773, 779 (Fed. Cir. 1985) (citing **In re Petering**, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962)).

Upon our careful review of Iida, we find that Iida does not teach an overlapping range of the claimed disc-shroud gap of greater than 0.1 mm but not greater than 0.6 mm. We note that Iida's figure 6 does not contemplate a gap size less than 2 mm since the curve ends approximately at that point. Furthermore,

we note that column 4, lines 46 through 64, does recite that the distance D is less than 3 mm. However, this must be read in the context of figure 6 which shows that this language does not mean substantially less than 3 mm but more or less in the range of 1.5 to 3 mm. We fail to find that one of ordinary skill in the art would recognize that the disc-shroud gap would be in any way in the range of .1 mm to .6 mm which is substantially less than 3 mm. Therefore, we find that Iida does not anticipate the Appellants' claimed invention as recited in claims 1, 2, 6, 7, 11 and 12.

We now will consider the rejection of claims 2 through 5, 7 through 10 and 12 through 15 under 35 U.S.C. § 102 as being unpatentable over Iida. We note that claims 2, 6, 7, 11 and 12 are dependent on claim 1 and thereby contain the above limitation of claim 1 which we have discussed. We note that claim 3 is an independent claim with claims 8 and 13 dependent upon claim 3. Claim 3 recites "a range which is greater than 0.1 mm but not greater than 0.6 mm." We note that claim 4 is an independent claim in which claims 9 and 14 are dependent thereon. Claim 4 recites "a range which is greater than 0.1 mm but not greater than 0.4 mm."

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We note that the Examiner has relied on Iida for teaching an overlapping range. See pages 4 through 6 of the Examiner's answer. We thereby will not sustain this rejection for the same reasons as we set forth above.

Claim 5 is another independent claim with dependent claims 10 and 15. We note that claim 5 recites "said gap has a normalized value which is independent of a diameter of said magnetic discs and which is in a range from about $1/150$ to $1/890$." We note that the Examiner relies on Iida teaching the same overlapping range as discussed above to obtain these normalized value. See page 7 of the final action as well as pages 5 and 6 of the Examiner's answer. Therefore, we will not sustain the rejection of claims 5, 10 and 15 for the same reasons as above.

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In view of the foregoing, we have not sustained the Examiner's rejection of claims 1, 2, 6, 7, 11 and 12 under 35 U.S.C. § 102 and we have not sustained the Examiner's rejection of claims 2 through 5, 7 through 10 and 12 through 15 under 35 U.S.C. § 103.

REVERSED

ERROL A. KRASS)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
MICHAEL R. FLEMING)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
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LANCE LEONARD BARRY)	
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